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ILLUSTRATED CATALOGUE
FROM
Charles Cooper's Machine and Weaving Works,
BENNINGTON, VERMONT,
U. S. A.





Geo Cooper.

The original inventor of the Tiffany & Cooper Patent
Power Rib Knitting Machine.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE

OF

AUTOMATIC

KNITTING * MACHINERY

For the manufacture of all varieties of Ribbed Goods and
Full Fashioned Shirts and Drawers.

ALSO

SPRING KNITTING NEEDLES

MANUFACTURED BY

CHARLES COOPER,

BENNINGTON, VERMONT.

1886-87.





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CONANT, BOSTON

CHARLES COOPERS
MACHINE AND NEEDLE WORKS

CHARLES COOPERS MACHINE AND NEEDLE WORKS, BENNINGTON, VT.

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CHARLES COOPER, BENNINGTON, VT.
1886.

•*• INTRODUCTORY • REMARKS. •*•

HE TIFFANY & COOPER Patent Rib Knitting Machine has become very widely known in this country. Nearly all knit goods manufacturers have one or more in use, and pronounce it the best Rib Knitting Machine known to the trade. In response to numerous inquiries I have thought best to give a brief sketch of the history of this machine, which may prove of interest to all who may have occasion to refer to this Catalogue.

Joseph Powell was the first inventor of a Flat Power Rib Knitting Machine made in this country, as far as we know, and his brother Thomas was associated with him. These machines were very complicated and none but the inventors could successfully operate them. It was patented by Mr. Joseph Powell Oct. 2, 1855, and Mr. Charles Parker of Meriden, Conn., became interested with Mr. Powell, and fitted up a shop to build and operate these machines on the premises of Mr. Parker.

Mr. George Cooper entered the employ of Messrs. Parker & Powell in the year 1855, and was largely interested in the construction of these machines. He very soon discovered that they were too complicated and also became convinced that they could not be brought into general use. About this time he made up his mind that he could construct a machine much more simple, and immediately commenced his experiments. He made the patterns for a small machine, which he intended for a model, and in June 1856 had the castings made, and while on a visit to my home in Enfield did the planing in the Shaker machine shop. When he returned to Meriden he made a work shop in his house, working late evenings after his days work was done. Early in the spring of 1857 he called the attention of Mr. Eli Tiffany (who was at this time in the employ of Parker & Powell operating one of their machines) to his inven-

tion. He took Mr. Tiffany into his workshop and showed him his plans and the machine he was working out. Mr. Tiffany was very much pleased and anxious to take hold with him. Soon after this Mr. Tiffany went to Glastenbury, Conn. In a few months afterwards he wrote to Mr. Cooper that he had made a small machine out of wood, with one cam, and had succeeded in making a piece of knit work one inch wide. In April, 1858, Mr. Cooper received another letter from Mr. Tiffany in which he said he had knit a piece of work a foot long, and suggested that the machine be called the Cooper & Tiffany Rib Knitting Machine. About a month latter Mr. Tiffany came to see Mr. Cooper at Meriden. They then agreed to unite their interests.

Soon after this Mr. Cooper moved to Enfield, with two of the Parker & Powell machines, under a contract with Mr. Parker to furnish the Enfield Manufacturing Co. with Rib Tops. This contract with Mr. Parker is dated Sept. 20, 1858. In this contract Mr. Cooper agreed to give Mr. Parker the benefit of any improvements he should make as long as this contract should be in force, but Mr. Parker refused to adopt the improvements tendered to him by Mr. Cooper.

Mr. Tiffany then came to Enfield with his small wood model. Then Mr. Cooper arranged, under agreement made Dec. 5, 1858, to take Mr. Tiffany in with him and perfect the machine together. Mr. Cooper in consequence of the then existing agreement with Mr. Parker, did not feel free to make the application for the Patent, so Mr. Tiffany made the application in his own name, agreeing to assign one undivided half to Mr. Cooper when the Patent should be granted. This is the reason Mr. Tiffany's name is first in the Patent Office.

Soon after this Mr. Cooper entered into co-partnership with the writer. I then resided in Enfield, Conn., and was engaged in the manufacture of knitting needles.

About this time Mr. Tiffany came to our shop and in connection with Mr. Cooper completed their model machine and secured their Patent May 1, 1860. The first machine was built for W. G. Medlicott of Windsor Locks, Conn.

June 29, 1866, they gave me the power of attorney for the purpose of negotiating for the sale of the patent rights. I then visited Cohoes and called the attention of the manufacturers to this machine, also showing samples of the work. I found them very much interested, so I decided to have Mr. Tiffany bring the working model to Cohoes, and after calling the manufacturers together, the machine was placed on exhibition in Mr. Root's mill.

Mr. William Wood and Campbell & Clute bought an interest in the Patent for the State of New York. Mr. Tiffany retaining his interest entered the employ of Campbell & Clute to superintend the setting up and starting the machines. Soon after this I purchased my brother's interest in the Patent for the State of Vermont, and subsequently for the United States. In the year 1868 I bought an eight section machine from Campbell & Clute and operated the same in the mill of H. E. Bradford & Co., Bennington.

In the fall of 1869 I removed my family and business from Connecticut to Bennington, Vt., and leasing premises of Mr. Olin Scott, arranged to furnish the manufacturers with drawer bottoms and shirt cuffs, at the same time continuing my needle business, in which I have been engaged since the year 1849.

At this time, Mr. Tiffany not feeling satisfied to remain with Campbell & Clute, came to Bennington and bought an interest with me in running the machines. We then agreed to form a co-partnership for the manufacture of these machines for the trade, under the firm name of Tiffany & Cooper. This has now continued for the term of fifteen years, during which time great improvements have been made, and it is now generally conceded that there is no better Rib Machine produced.

It is now generally known that the firm of Tiffany & Cooper obtained several other patents, the most valuable of which is the machine for making full fashioned shirts and drawers, and though the co-partnership is now dissolved, we each own an equal interest in the patent rights, also all the old patterns of every machine ever built by us up to the time of separation belong equally to each.

We are both building substantially the same machines, though our shops are entirely independent.

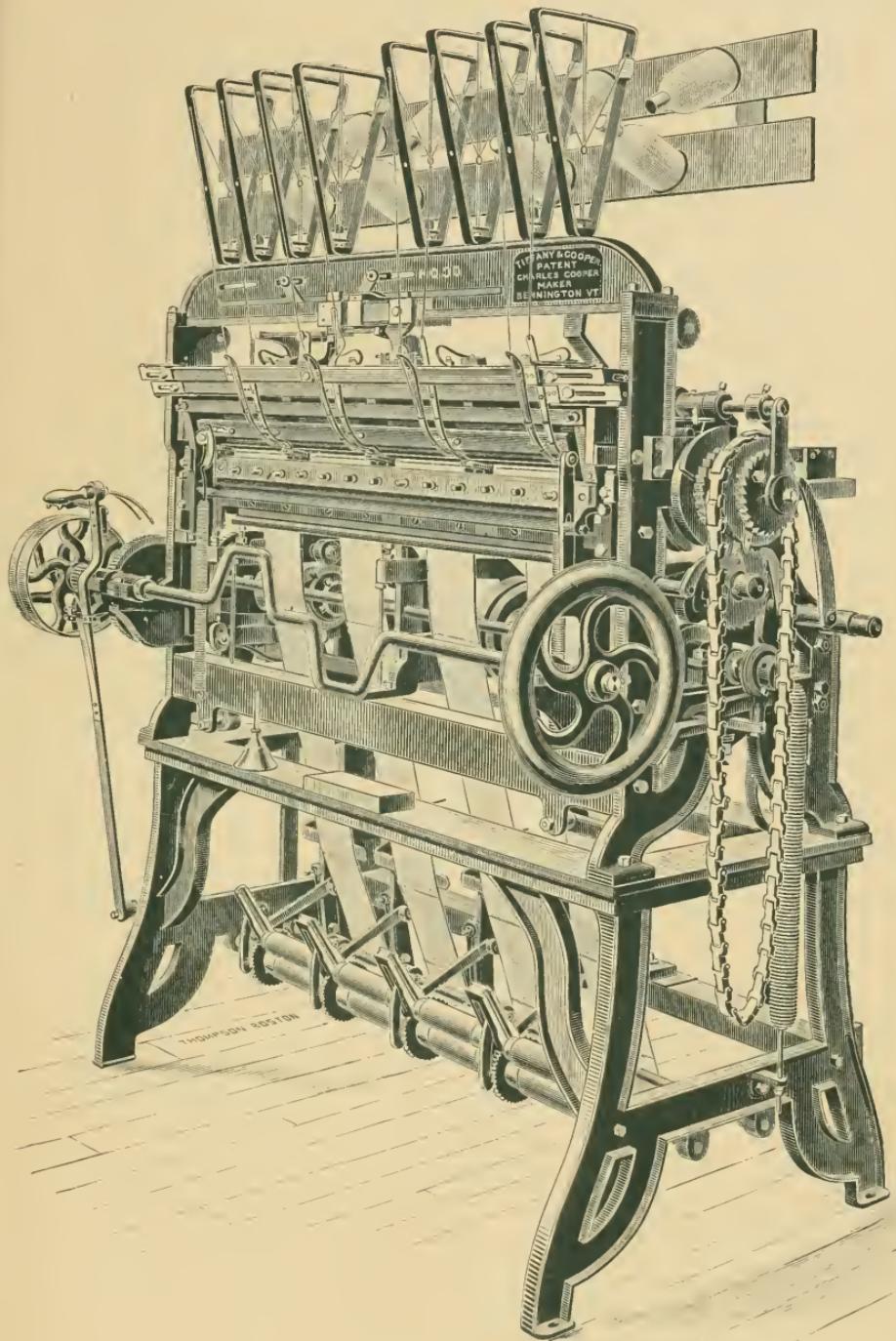
I have erected new and commodious buildings and have purchased the best and latest improved tools; also have in my employ Mr. Daniel Hurley, who has had charge of Tiffany & Cooper's shop for several years past, and with other first-class workmen I am prepared to build these machines, herein represented, in every respect equal to those offered by my competitors, and will guarantee satisfaction.

CHARLES COOPER.



TIFFANY & COOPER'S PATENT

Four Section Rib Knitting Machine.



MANUFACTURED BY
CHARLES COOPER,
BENNINGTON, VT.

FOUR SECTION RIB KNITTING MACHINE.

Patented April 30, 1874.

THE machine represented on the preceding page has been in practical use for more than fifteen years, and the quality of work it produces cannot be surpassed. It occupies about three by five and a half feet floor space, and is constructed in two parts, an upper and lower, to facilitate transportation and setting up.

They are built in different widths, but mostly in two and four sections, and will make drawer bottoms, shirt cuffs, stocking tops, shirt borders, shirts and drawers, ladies' vests and pants, of any gauge required.

These machines are all provided with adjustable attachments, or provisions for regulating the length of the drawer bottom, shirt cuff, or shirt borders, also the length of the stitch, and with automatic appliances for putting in welts and slack courses and with an automatic take up, each division being entirely independent. Every part of the machine is accessible to the operator for adjustment or repairs, without disturbing or throwing out of adjustment any adjacent part.

The provisions for removing and repairing worn out or damaged needles and sinkers are extremely convenient; the breaking of a needle occasioning but a moment's delay or stoppage of the machine. These machines, however, are so constructed that very little loss or damage occurs from broken needles or sinkers.

A good workman can, without difficulty, run four machines, and on the four section machines can produce, on each machine,

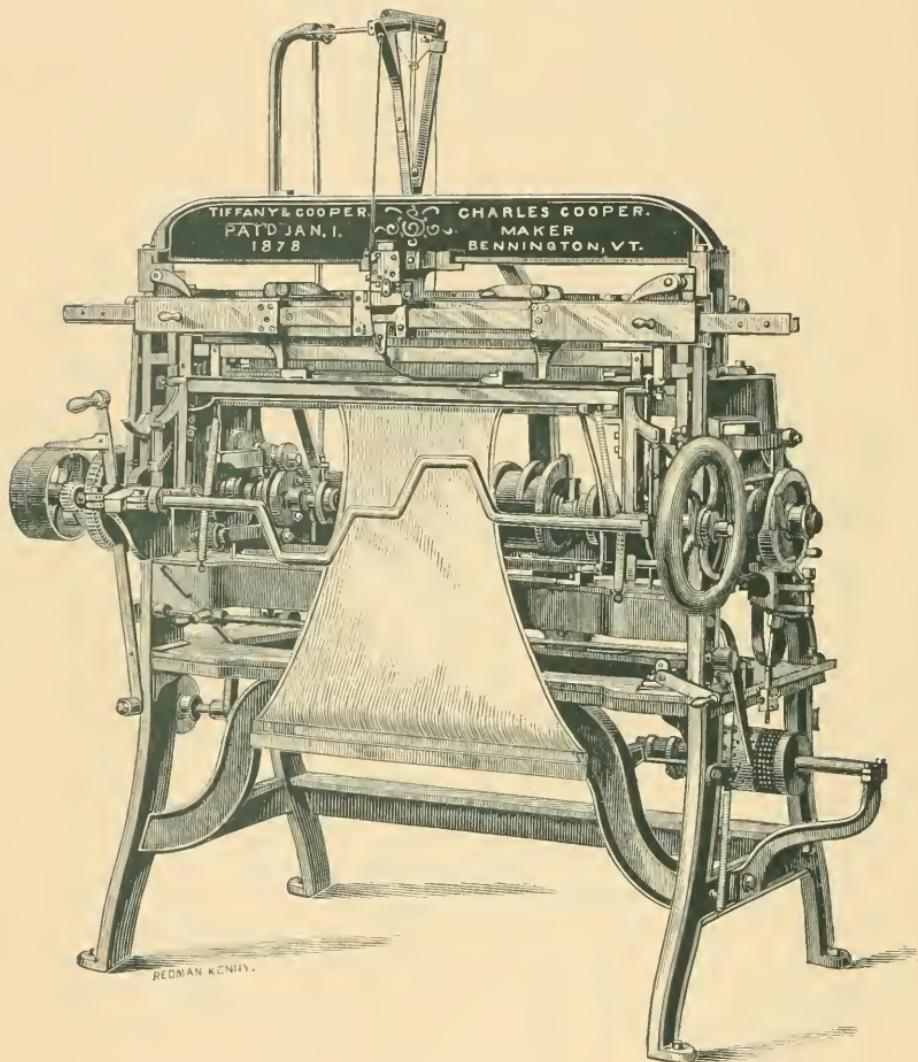
forty dozen shirt cuffs per day. They run from thirty-five to forty courses per minute.

I furnish an extra chain attachment for making fancy colored goods, which consists of an additional thread guide bar, rack wheels, pins and a series of blocks in chain form, working in connection therewith and forming a constituent part of what I term the "end tackle." By the use of this attachment my four section machine is adapted to make fancy ribbed cuffs, wristlets, *garters and stockings*, of any desired pattern, and the work will be of a more even grade than that made on hand machines, while the quantity will be *more than three times* as great.

A change from one pattern to another is readily made by the operator, and by a simple mechanical contrivance, the different colors are taken up and used without stopping the machine.



SPRING NEEDLE
FASHIONING MACHINE.



MANUFACTURED BY
CHARLES COOPER,
BENNINGTON, VT.

SPRING NEEDLE FASHIONING MACHINE.

Patented January 1, 1878.

FTER more than ten years of unremitting study, experiment and practical test, we have succeeded in bringing out what we confidently believe to be the very best fashioning machine built in this or any foreign country. It is automatic in all its movements, it produces shapes with perfect selvedges by the process of *narrowing* and not by *widening* as is done in some fashioning machines.

It is well understood by practical knitters that selvedges made by narrowing are more perfect, firmer, and better in every respect than selvedges made by widening. The parts of garments which we style "shapes," when they leave this machine have perfect edges and are in proper form to make the garment by running up the edges without any cutting or fitting, and the seam of the garment so formed is smooth, presenting no raw or raveling edges to irritate the person of the wearer.

In making garments by the use of these fashioning machines, there results no loss whatever, either of yarn or cloth. In point of quality, firmness, evenness of texture and beauty of finish, the goods turned out by these machines will challenge comparison with the best fashioned goods made anywhere in the world.

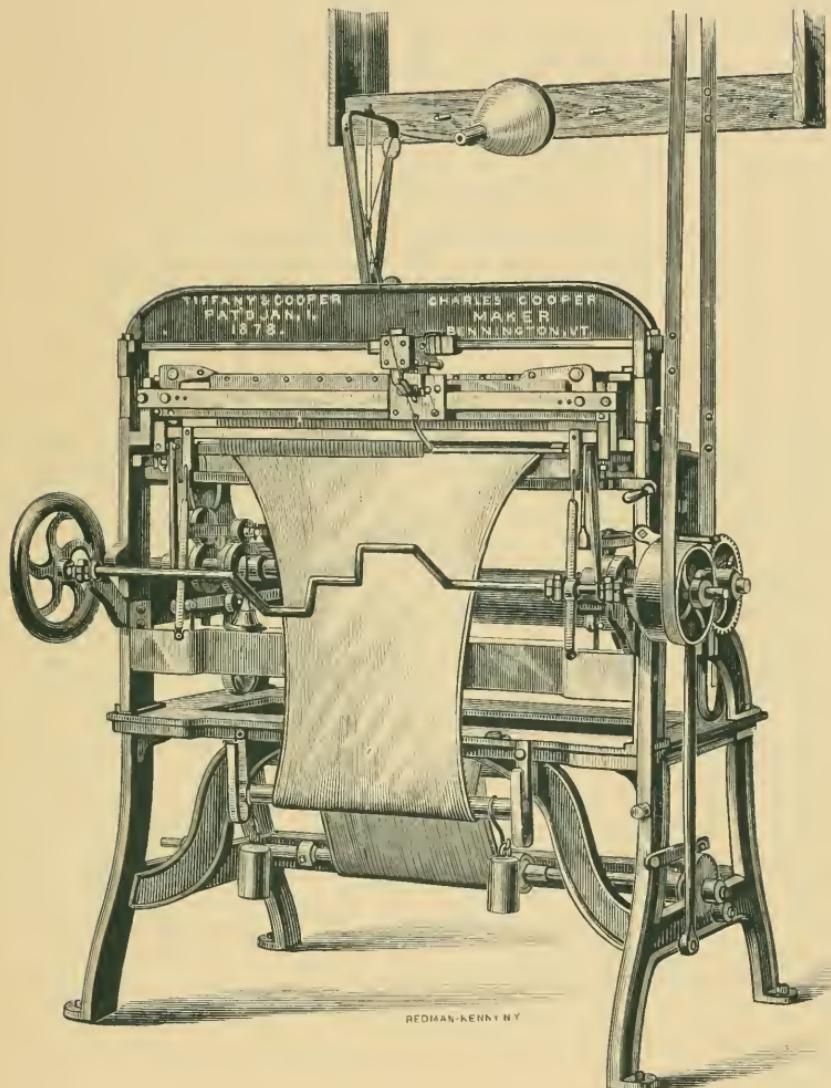
This machine weighs about fifteen hundred pounds and occupies three by six feet of floor space and runs very lightly. It knits and fashions ladies' vests and pants and men's drawers and shirt sleeves. The shape of the selvedges is controlled by a pattern formed on a cylinder provided with

appliances of such simplicity that changes from one shape or pattern to another can be effected by the operator without disorganizing the machine and in a very few minutes. All parts of these machines are as easy of access for alteration, adjustment or repairs as the rib machines and they do not require more than ordinary intelligence, experience or skill in their operation.

These machines, which are built to knit a single web, possess decided advantages over fashioning machines having machinery for producing several webs combined in a single frame. A breakage of needles, sinkers, or yarn in these machines, involves the stoppage of but one section, whereas in the old style of combination machines, whenever such a breakage occurs, or it becomes necessary to take off a finished pattern, the other sections of machinery in the same frame must stop and lie idle until such breakage is repaired, or until such finished pattern is removed and the mechanism re-adjusted, ready to start again.



SPRING NEEDLE
SHIRT BODY MACHINE.



MANUFACTURED BY
CHARLES COOPER,
BENNINGTON, VT.

SPRING NEEDLE
SHIRT BODY MACHINE.

MEN'S WEAR.

THIS machine is divested of all complex devices of every kind and is constructed with the fewest and simplest mechanical appliances admissible for knitting a straight selvedged edge and continuous web for bodies of men's shirts. It is provided with an automatic take-up, capable of holding a large roll of cloth and may be run three days without doffing. The goods when taken from the machine are in large rolls or long pieces, ready to be subdivided into suitable lengths for bodies. These features of simplicity and convenience render it possible for one attendant to operate six or eight machines without difficulty.

They are about the same weight and occupy about the same floor space as the fashioning machine.

I also build a small machine for knitting gussets for drawers, with selvedge and slack courses to mark their length and facilitate cutting off.

RIB MACHINE PARTS.

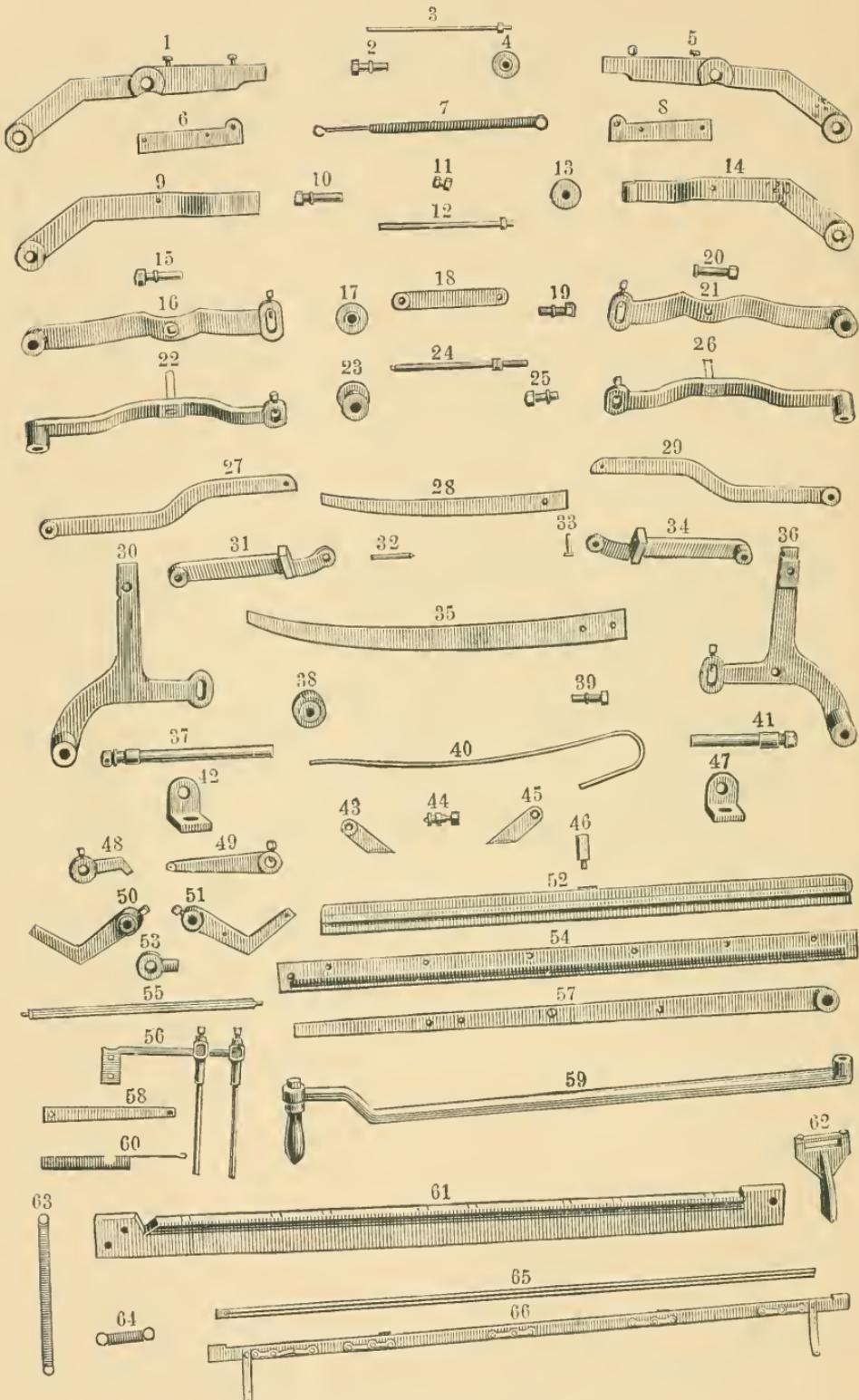
SINKER.



I am now prepared to furnish, at short notice, all parts of the Rib and Fashioning Machines, and I take pleasure in giving to the manufacturers the following pages, upon which will be found nearly all parts of the Rib Machine, illustrated, numbered and named, for the convenience of those wishing to order.

I am also prepared to furnish all the various kinds of Tiffany & Cooper and Campbell & Clute sinkers and springs, keeping them always in stock, so that orders may be filled promptly.

RIB MACHINE PARTS.

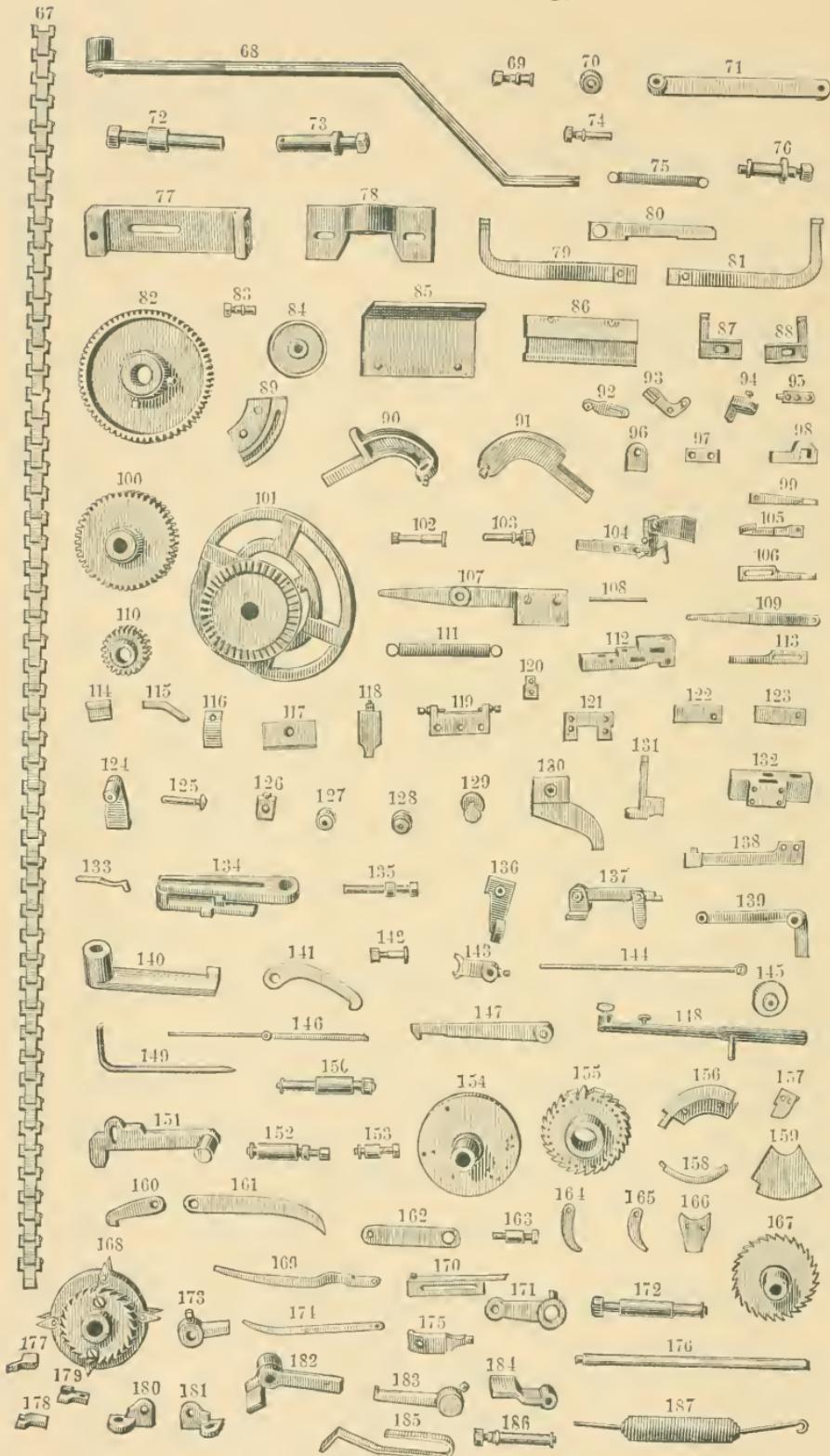


[See following page for names of parts.]

NAMES OF PARTS WITH NUMBERS.

No.	No.
1 Falling Bar Lever, No. 1 End.	31 Presser Arm, No. 2 End.
2 Falling Bar Lever, Truck Stud.	32 Presser Spring Rod.
3 Falling Bar Rod.	33 Presser Arm Pin.
4 Falling Bar Truck.	34 Presser Arm, No. 1 End.
5 Falling Bar Lever, No. 2 End.	35 Front Needle Bar Spring.
6 Falling Bar Lever Spring, No. 1 End	36 Back Needle Bar Lever, No. 1 End.
7 Falling Bar Spring.	37 Upper Levers Stud.
8 Falling Bar Lever Spring, No. 2 End	38 Back Needle Bar Lever Truck.
9 Knocking Over Bar Lever, No. 1 End.	39 Back Needle Bar Lever Truck Stud.
10 Knocking Over Bar Lever Truck Stud.	40 Back Needle Bar Spring.
11 Knocking Over Bar Lever End Bolt.	41 Lower Levers Stud.
12 Knocking Over Bar Lever Support Rod.	42 Lower Lever Bracket.
13 Knocking Over Bar Lever Truck.	43 Front Lifting Catch, No. 1 End.
14 Knocking Over Bar Lever No. 2 End.	44 Front Lifting Catch Stud.
15 Knocking Over Bar Lever No. 2 End Truck Stud.	45 Front Lifting Catch, No. 2 End.
16 Front Needle Bar Lever, No. 1 End.	46 Presser Guide.
17 Front Needle Bar Lever Truck.	47 Upper Lever Bracket.
18 Front Needle Bar Lever Connect- ing Piece.	48 Splicing Thread Dog.
19 Front Needle Bar Lever End Stud.	49 Splicing Thread Spring Lever.
20 Front Needle Bar Lever Truck Stud, No. 2 End.	50 Splicing Thread Arm, No. 2 End.
21 Front Needle Bar Lever, No. 2 End.	51 Splicing Thread Arm, No. 1 End.
22 Presser Lever, No. 1 End.	52 Presser Casting.
23 Presser Lever Truck.	53 Dog for Shipping Upper Rod.
24 Front Needle Bar Lifting Rod.	54 Presser Bar.
25 Presser Lever End Stud.	55 Support Bar for Upright Front Slide.
26 Presser Lever, No. 2 End.	56 Belt Shipper.
27 Presser Connecting Lever, No. 2 End.	57 Take-Up Lever.
28 Presser Spring.	58 Friction Spring for Belt Shipper Lever.
29 Presser Connecting Lever, No. 1 End.	59 Belt Shipper Lever.
30 Back Needle Bar Lever, No. 2 End.	60 Back Rod Shipping Spring.
	61 Back Knocking Over Bar.
	62 Belt Shipper Guide.
	63 Spring for Middle Shipping Rod.
	64 Spring for Shipping Inside Falling Bar.
	65 Inside Falling Bar.
	66 Falling Bar.

RIB MACHINE PARTS.



[See two following pages for names of parts.]

No.	No.
67 Chain for Stripping.	102 Stud for Lever No. 107.
68 Draw Lever.	103 Presser Arm Stud.
69 Draw Cam Truck Stud.	104 Falling Bar Shipper Slide.
70 Draw Cam Truck.	105 Slurcock Spring, Right Hand.
71 Draw Lever Connecting Piece.	106 Carrier Bar Friction Spring, No. 1 End.
72 Draw Cam Stud.	107 Lever for stopping Back Shipper Rod.
73 Intermediate Gear Stud.	108 Support Rod for Back Needles.
74 Draw Lever End Stud.	109 Carrier Needle, Outside.
75 Upper Rod Shipping Spring.	110 Small Spur Gear.
76 Draw Lever Stud.	111 Take-Up Lever Spring.
77 Draw Lever Stand.	112 Carrier Bar Box.
78 Draw Cam Stand.	113 Carrier Bar Friction Spring, No. 2 End.
79 Knocking Over Truck Shipper, No. 2 End.	114 End Cap for Needle Bar.
80 Spring for Shipping Front Needle Bar Truck, No. 1 End.	115 Back Needle Support Stand.
81 Knocking Over Truck Shipper, No. 1 End.	116 Piece to support Falling Bar at center.
82 Large Spur Gear.	117 Needle Bar Cap.
83 Take-Up Truck Stud.	118 Slurcock.
84 Take-Up Truck.	119 Slurcock Bar Casting.
85 Knocking Over Plate.	120 Slurcock Bar Stop.
86 Spring Plate.	121 Slurcock Casting.
87 Presser Truck Shipper, No. 1 End.	122 Falling Bar Box Cap, No. 1 End.
88 Presser Truck Shipper, No. 2 End.	123 Falling Bar Box Cap, No. 2 End.
89 Cam for moving Shipper Bar.	124 Outside Carrier Bar Driver.
90 Presser Stand, No. 1 End.	125 Pin for Outside Carrier Bar Driver
91 Presser Stand, No. 2 End.	126 Casting for stopping Back Shipping Rod.
92 Piece for holding down Front Needle Bar, No. 2 End.	127 Back Needle Bar Slide Truck, No. 1 End.
93 Piece for holding down Front Needle Bar, No. 1 End.	128 Back Needle Bar Slide Truck, No. 2 End.
94 Stand for above pieces.	129 Shipping Spool for above Trucks.
95 Casting to steady Presser Guide.	130 Slurcock Driver for Border Frame
96 Bracket for holding Front Needle Bar.	131 Carrier Bar Upright Shipping Slide
97 Splicing Thread Piece.	132 Front Slide.
98 Box for Falling Bar Shipper Slide.	133 Piece for supporting Falling Bar at Center.
99 Slurcock Spring, Left Hand.	134 Take-Up Roll Guide.
100 Intermediate Spur Gear.	
101 Draw Cam.	

No.

135 Shipping Bar Truck Stud.
 136 Stand for Lever for raising Shipping Bar Truck.
 137 Catch for holding Shipping Bar when shipped.
 138 Snap Catch for Front Slide.
 139 Shipping Bar Lever.
 140 Take-Up Casting.
 141 Take-Up Stop Catch.
 142 Stud for Shipping Bar Lever.
 143 Piece for raising Shipping Bar Truck.
 144 Rod for raising Shipping Bar Truck.
 145 Lower Shipping Bar Truck.
 146 Take-Up Tension Spring and Rod.
 147 Take-Up Catch.
 148 Take-Up Casting.
 149 Take-Up Tension Piece.
 150 End Tackle Lever Stud.
 151 End Tackle Lever.
 152 Long End Tackle Catch Stud.
 153 Short End Tackle Catch Stud.
 154 End Tackle Wheel.
 155 End Tackle Wheel Ratchet.
 156 Piece for making Welt.
 157 Piece for making Welt.
 158 Piece for making Welt.
 159 Piece for making Welt.
 160 Lower End Tackle Catch.

No.

161 Upper End Tackle Catch.
 162 Steadying Piece for Chain Wheel.
 163 Stud for End Tackle Wheel Stop Catch.
 164 End Tackle Wheel Stop Catch.
 165 End Tackle Wheel Stop Catch.
 166 Piece for starting End Tackle Wheel.
 167 Lower End Tackle Ratchet.
 168 Chain Wheel.
 169 Carrier Needle.
 170 Carrier Bar Stop and Spring.
 171 Arm for End Tackle Stop Catch.
 172 Lower End Tackle Ratchet Stud.
 173 Dog for Shipping Top Rod on Welt.
 174 Carrier Needle, Inside.
 175 Lower Carrier Bar Driver.
 176 Brake Shipping Rod.
 177 Chain Bit, Highest Lift.
 178 Chain Bit, Middle Lift.
 179 Chain Bit, Lowest Lift.
 180 Bracket for Break Rod.
 181 Bracket for Break Rod.
 182 Break Lever.
 183 Break Shipper.
 184 Break.
 185 Spring for Shipping Back Rod.
 186 Brake Stud.
 187 End Tackle Spring.



CHARLES COOPER,

Manufacturer of all Varieties of

SPRING + NEEDLES

NARROWING POINTS.

TRANSFERRING POINTS.

STARTING HOOKS.

WELT HOOKS, Etc. Etc.

ALSO DEALER IN

LATCH NEEDLES

OF EVERY DESCRIPTION.

—
WHEN ORDERING SEND SAMPLE.

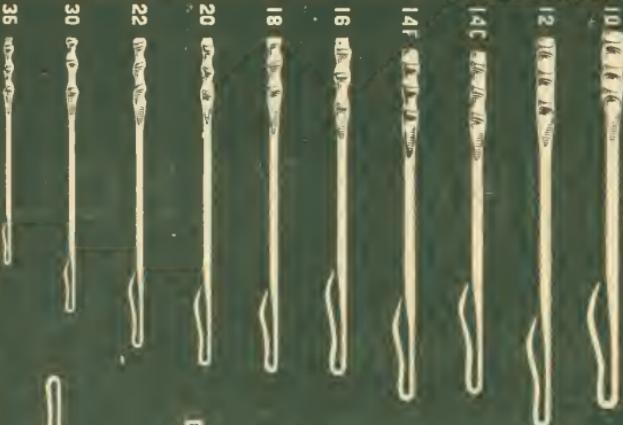
CHARLES COOPER,

Manufacturer of all Varieties

SPRING NEEDLES,

FOR KNITTING MACHINERY.

CYLINDER NEEDLES FROM NO. 10 TO NO. 36 GAUGE.



RIB MACHINE NEEDLES. ALL GAUGES.



SINGLE SHANK RIB MACHINE NEEDLE.



ALL
GAUGES.

ALL
GAUGES.

DOUBLE SHANK RIB MACHINE NEEDLE.



FRONT
BACK

HAND-FRAME NEEDLES.



FRONT

BACK

When Ordering Send Sample.

WORKS ON MAIN ST.

BENNINGTON, VT.

OFFICE OF

CHARLES COOPER,

Manufacturer of

KNITTING MACHINE NEEDLES.

— — — — —
BENNINGTON, Vt., October, 1886.

It is well understood by manufacturers of knit goods that the production of a beautiful, uniform and even texture in the fabric, is largely dependent on the needles used, and that however perfect the knitting machinery may be in other respects, the use of needles that are not *uniform* and *tempered* as they should be, will more than counter-balance any advantages of improved machinery, and will result in loss to the user, of both money and reputation.

For more than thirty-five years I have been constantly engaged in the manufacture of knitting machine needles for the trade, and during that time have constantly had in view the elevation of the standard of excellence of the goods I manufacture. With what success my efforts have been rewarded I will leave my customers to judge. I have always endeavored to furnish my patrons with goods honestly made from the very best material. I can confidently say that I use no inferior stock and employ none but skilled labor, and all needles sent from my establishment are manufactured under my personal supervision, and are warranted to be in all respects as represented. After practical tests I have found that the best imported steel is the most reliable and gives the most satisfactory results. Every coil of wire used by me is first tested

by cutting a piece from each end and tempering it. If it does not come up to the standard requirements it is rejected. A large stock of wire and needles of all gauges are always kept on hand, so that any order, however exceptional in its character, may be promptly filled. Every needle is carefully inspected and pliered by an experienced workman before they are shipped.

For the last fifteen years, as a member of the firm of Tiffany & Cooper, I have been practically engaged in the manufacture of a wide range of knitting machinery, and such employment has necessarily enjoined upon me the closest attention to every minute detail in the manufacture and perfection of finish of the needles used in such machines. The unequalled perfection of the needles used in our machines has contributed largely to their gratifying success and popularity, and the wide range of experience and practical knowledge so acquired has been turned to account by me in the adaptation of tools, and in the training of skilled labor, to produce a line of knitting machine needles which will challenge comparison with any made in this country.

My new quarters afford me one of the largest and finest needle factories known, and being equipped with all the modern improvements for the manufacture of needles, I am able to give to the trade, needles that are even in temper, uniform in shape, highly polished, guaranteed against rust, in any quantity and at satisfactory prices.

Thanking you for your patronage of the past, and soliciting your future orders, I remain,

Yours very respectfully,

CHARLES COOPER.

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Lot-6





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